

PATENT

IN THE UNITED STATES PATENT AND TRADEMARK OFFICE

Docket No.: HESS-3

In re Application of:	}
RAUL HESS	)
Appl. No.: 10/572,757	)
Filed: March 20, 2006	) Confirmation No.: 9549
For: PROCESS FOR MULTI-LAYER MATERIAL	)
REMOVAL OF A THREE-DIMENSIONAL	)
SURFACE BY USING A RASTER IMAGE	)
DESCRIBING THE SURFACE	)

INFORMATION DISCLOSURE STATEMENT

Mail Stop Amendment  
Commissioner for Patents  
P.O. Box 1450  
Alexandria, VA 22313-1450

SIR:

In accordance with 37 C.F.R. 1.56, applicant wishes to call the attention of the Examiner to the references listed on enclosed form PTO-1449 which were cited in the instant specification, in the International Search Report issued by the European Patent Office with regard to the corresponding International patent application No. PCT/EP2004/010761 and in a German Office Action issued by the German Patent Office with regard to the corresponding German patent application No. 103 45 087.4, respectively. Applicant does not admit that any of the cited documents constitutes prior art against the pending application.

Copies of these references are submitted herewith along with form PTO-1449. The Examiner is requested to initial the attached form PTO-1449 and to return a copy of the initialed document to the undersigned as an indication that the attached references have been considered and made of record.

- [ ] This Information Disclosure Statement is filed within three months of the filing date of a national application other than a continued prosecution application under 1.53(d), so that no fee under 37 C.F.R. §1.97 is due.
- [ ] This Information Disclosure Statement is filed within three months of the date of entry of the national stage as set forth in 1.491 in an international application, so that no fee under 37 C.F.R. §1.97 is due.
- [X] This Information Disclosure Statement is filed before the mailing of a first Office Action on the merits, so that no fee under 37 C.F.R. §1.97 is due.
- [ ] This Information Disclosure Statement is filed before the mailing of a first Office Action after the filing of a request for continued examination under §1.114, so that no fee under 37 C.F.R. §1.97 is due.
- [ ] This Information Disclosure Statement is filed after the issuance of a first office but before issuance of a final action under §1.113, or a notice of allowance under §1.311.
- [ ] This Information Disclosure Statement is submitted after the mailing of a final action or a notice of allowance, but before payment of the issue fee.
- [ ] The undersigned submits the following statement requesting consideration of this statement:  
The undersigned hereby states:
  - [ ] That each item of information contained in the information disclosure statement was first cited in any communication from a foreign patent office in a counterpart foreign application not more than three months prior to the filing of the information disclosure statement;
  - [ ] That no item of information contained in the information disclosure statement was cited in a communication from a foreign patent office in a counterpart foreign application, and, to the knowledge of the person signing the statement

after making reasonable inquiry, no item of information contained in the information disclosure statement was known to any individual designated in §1.56(c) more than three months prior to the filing of the information disclosure statement.

- The fee of \$180.00 set forth in 1.17(p).
- The Commissioner is hereby authorized to charge the fee as set forth in 1.17(p), and any additional fees which may be required, or credit any overpayment to Deposit Account No. 06-0502.
- The Commissioner is hereby authorized to charge any fees which may be required, or credit any overpayment to Deposit Account No. 06-0502.

In order to satisfy the requirement under 37 C.F.R. §1.98(a)(3) for a concise explanation of the relevance of each item of information, applicant herewith submits a copy of the International Search Report. In addition, applicant notes with respect to any information that is not in English language as follows:

German Offenlegungsschrift DE 2 111 628 describes engraving of relief printing cylinders using electrically produced and controlled energy beams, by scanning an original to produce electrical signals which are converted to control signals for an electron beam so as to cause this to produce the corresponding pattern as a point screen on the printing cylinder surface.

German Offenlegungsschrift DE 43 26 874 A1 describes the engraving of a pattern into the surface of a work piece by a laser beam which is directed onto the surface and controlled in its intensity in a location-dependent manner in dependence on the pattern, one surface area of a design pattern is first scanned optically or mechanically and the surface information thus obtained is converted into electrical control signals. These signals control the laser beam in a surface area which corresponds to the surface area of the design pattern. Different patterns, also irregular ones as desired can be engraved rapidly and easily by

changing the design pattern. The scanning of the design pattern can be carried out finely and with high resolution, so that the engraving also has a correspondingly high resolution.

German Offenlegungsschrift DE 197 30 887 A1 describes a process for producing and applying complex pictures and objects (eg photographs, video pictures etc) onto food products such as meat, pastry, fish, cheese etc as well as on products produced by the soap industry, comprises using a carbon dioxide laser writing unit. The latter is used according to the scan-raster principle.

German Offenlegungsschrift DE 44 41 337 A1 describes a procedure for applying a pattern onto a high-quality steel plate (23) using a laser source (30), wherein a picture region (24) of the plate is divided into raster elements and to each element a corresponding raster element of an original photographic copy is assigned. The laser source irradiates the plate and generates engraved units inside the elements by removing material to form recesses. The brightness density of a raster element is determined by the arrangement of the engraved units inside the raster element. The bandwidth of the brightness density of the original copy is matched to a bandwidth of the brightness density on the plate using a linear graduation curve.

German Patent No. DE 42 09 933 C2 describes a partial surface modification of metallic or non-metallic bodies carried out using a Q-switched continuous wave Nd:YAG laser having optionally a beam expander in the beam path, a beam deflector with a computer-controlled rotary deflection mirror, and a plane field objective for focussing the laser beam, the laser being moved over the surface along one or more reference lines present by the computer. The laser beam is moved within an outline (U1, U2) delimiting the surface portion (A) to be modified, along reference lines forming the grid lines (R1, R2, R3) of a grid field (N) and then the entire grid field (N) is shifted at least once by a certain amount, while maintaining the relative position of the outline (U1, U2) and the entire surface

portion (A) is re-scanned by the laser beam along the grid lines (R1, R2, R3). During each scan, the operating time and the energy content level of the laser pulses are limited so that material evaporation is effected with minimal plasma formation.

German Offenlegungsschrift DE 100 32 981 A1 describes a process for material processing which comprises guiding a laser beam over a section (13) of a surface (12) of a workpiece to be treated and moving the workpiece to bring a neighboring section (14) of the workpiece into the processing field of the laser. The laser beam is guided in traces (20) over the field. An overlapping region (21) is formed between neighboring sections (13-18) of the workpiece and processing is assigned to the sections so that the traces interact in the overlapping region.

German Offenlegungsschrift DE 39 39 866 A1 describes a laser engraving device using a laser light source (8) and a controlled beam deflector (5, 6) which allows the laser beam to be deflected onto a focussing mirror (3) in dependence on the characters to be engraved. The focussing mirror (3) comprises a rotationally symmetrical annular mirror or mirror section, with a current mirror surface (4) in the plane containing the axes of symmetry (16). While engraving the work piece need not be moved relative to the laser.

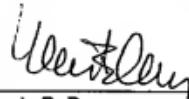
German Offenlegungsschrift DE 101 16 672 A1 describes a method for finely detailed areas and/or coarsely detailed areas that are marked out on the workpiece (2). A laser beam from a controlled laser source (4,5) is used to produce finely detailed structures in the appropriate areas and the coarser details are created by a separate material removal unit (8). Equipment for machining workpieces has a controllable laser source (4,5) producing a beam (6) for machining fine details and a controlled coarse material removal unit (8); (2) a printing plate whose layer (3) to be structured comprises a carrier layer, a first material layer with material properties suitable for producing coarsely detailed structures using a laser and/or a mechanical material removal tool and a second

material layer whose properties are more suited to laser machining of fine structures.

The above-identified application discloses and claims an invention patentable over this prior art.

Entry of the references above set forth into the file of the above application is believed to be in order and is respectfully requested.

Respectfully submitted

By:   
Ursula B. Day  
Attorney for Applicant  
Reg. No. 47,296

Date: September 13, 2006  
350 Fifth Avenue  
Suite 4714  
New York, N.Y. 10118  
(212) 244-5500  
UBD:af

**INFORMATION DISCLOSURE CITATION**

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Filing Date  March 20, 2006	Group	Examiner

**U.S. PATENT DOCUMENTS**

Examiner Initial	Document Number	Date	Name	Class	Subclass	Filing Date, if appropriate
	6,300,595	10-09-2001	Williams			
	2002/0114537	08-22-2002	Sutula, JR.			
	5,378,512	01-03-1995	Van Wyk			
	6,407,361	06-18-2002	Williams			

**FOREIGN PATENT DOCUMENTS**

Document Number	Date	Country	Class	Subclass	Translation
DE 101 18 672 A1	10-18-2001	Germany			No
DE 2 111 628 A1	09-14-1972	Germany			No
DE 197 30 887 A1	01-21-1999	Germany			No
DE 100 32 981 A1	01-24-2002	Germany			no
DE 43 26 874 A1	02-16-1995	Germany			yes
DE 39 39 886 A1	06-06-1991	Germany			no
DE 42 09 933 C2	09-30-1993	Germany			no
EP 1 262 316 A	12-04-2002	Europe			no
DE 100 12 520 A1	09-20-2001	Germany			no
EP 1 167 075 A2	01-02-2002	Europe			yes
DE 44 41 337 A1	05-09-1996	Germany			

**OTHER DOCUMENTS** (Including Author, Title, Date, Pertinent Pages, Etc.)

	Brochure of company Jens Scheel – Sondermaschinen, Itzehoe, 1986, Laser-Automat; Engraving automat
Examiner:	Date considered:

\*Examiner: Initial if citation considered, whether or not citation is in conformance with MPEP 609; Draw line through citation if not in conformance and not considered. Include copy of this form with next communication to applicant.

## INTERNATIONAL SEARCH REPORT

International Application No  
PCT/EP2004/010761

**A. CLASSIFICATION OF SUBJECT MATTER**  
 IPC 7 B23K26/00 B23K26/08 B23K26/36 B41C1/05 B44C1/22  
 G05B19/4099

According to International Patent Classification (IPC) or to both national classification and IPC

**B. FIELDS SEARCHED**Minimum documentation searched (classification system followed by classification symbols)  
IPC 7 B23K B41C B44C G05B

Documentation searched other than minimum documentation to the extent that such documents are included in the fields searched

Electronic data base consulted during the International search (name of data base and, where practical, search terms used)

EPO-Internal, WPI Data, PAJ

**C. DOCUMENTS CONSIDERED TO BE RELEVANT**

Category *	Character of document, with indication, where appropriate, of the relevant passages	Relevant to claim No.
Y	US 6 300 595 B1 (M.S.C. WILLIAMS) 9 October 2001 (2001-10-09) cited in the application the whole document	1-13
Y	EP 1 262 316 A (SCHABLONENTECHNIK KUFSTEIN AG) 4 December 2002 (2002-12-04) paragraphs '00461 - '00491, '00551, '00561, '00591, '00631; figures 3-7	1-13
Y	US 2002/114537 A1 (D.P. SUTULA JR.) 22 August 2002 (2002-08-22) paragraphs '00191, '00591 - '00651; figures 9-15	9-13
A	DE 100 12 520 A1 (HEIDELBERGER DRUCKMASCHINEN AG) 20 September 2001 (2001-09-20) the whole document	1-13

 Further documents are listed in the continuation of box C Patent family members are listed in annex

\* Special categories of cited documents:

'A' document dealing with the general state of the art which is not considered to be of particular relevance

'B' earlier document but published on or after the International filing date

'C' document which may throw doubts on priority, claim(s) or enablement or other special reason (as specified)

'D' document referring to an oral disclosure, use, exhibition or other means

'E' document published prior to the International filing date but later than the priority date claimed

'F' later document published after the International filing date or priority date and not in conflict with the application but cited to understand the principle or theory underlying the invention

'G' document of particular relevance, the claimed invention cannot be considered to involve an inventive step when the document is taken alone

'H' document of particular relevance, the claimed invention cannot be considered to involve an inventive step when the document is combined with one or more other such documents, such combination being obvious to a person skilled in the art

'I' document member of the same patent family

Date of the actual completion of the International search

Date of mailing of the International search report

24 January 2005

02/02/2005

Name and mailing address of the ISA

Authorized officer

European Patent Office, P.O. 5816 Patenten 2  
NL - 2280 HV Rijswijk  
Tel. (+31-70) 340-2590, Tx. 31 651 epo NL  
Fax (+31-70) 340-2616

Jeggy, T

## INTERNATIONAL SEARCH REPORT

Information on patent family members

National Application No  
PCT/EP2004/010761

Patent document cited in search report		Publication date		Patent family member(s)		Publication date
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US 2002114537	A1	22-08-2002		NONE		
DE 10012520	A1	20-09-2001		NONE		